

## WHAT IS CLAIMED IS:

1. A diffraction type lens, disposed in a luminous flux, having a wavelength selectivity;

said lens being constituted by a substrate having one surface formed with a zone plate exhibiting a smaller converging action with respect to a wavelength  $\lambda_1$  of light and a greater converging action with respect to a wavelength  $\lambda_2$  of light, and the other surface formed with a zone plate exhibiting a smaller converging action with respect to said wavelength  $\lambda_2$  of light and a greater converging action with respect to said wavelength  $\lambda_1$  of light, said substrate being transparent to said wavelengths  $\lambda_1$  and  $\lambda_2$  of light.

2. A diffraction type lens according to claim 1, wherein said diffraction type lens is shaped like a parallel plate.

3. A diffraction type lens according to claim 1, wherein each of said zone plates comprises concentric gratings each having a rectangular cross section.

4. A diffraction type lens according to claim 1, wherein said one surface formed with the zone plate has a height  $h_1$  satisfying the following conditional expressions (1) and (2), and said the other surface formed with the zone plate has a height  $h_2$  satisfying the following conditional expressions (3) and (4):

$$h_1 = L_1 \lambda_1 / (n_1 - 1) \quad (1)$$

$$h_1 = M_1 \lambda_2 / (n_2 - 1) + K_1 \lambda_2 / 2(n_2 - 1) \quad (2)$$

$$h_2 = L_2 \lambda_2 / (n_2 - 1) \quad (3)$$

$$h_2 = M_2 \lambda_1 / (n_1 - 1) + K_2 \lambda_1 / 2(n_1 - 1) \quad (4)$$

where

$\lambda_1$  and  $\lambda_2$  are the respective wavelengths of two incident light beams;

$n_1$  is the refractive index of a grating portion with respect to the wavelength  $\lambda_1$  of light;

$n_2$  is the refractive index of a grating portion with respect to the wavelength  $\lambda_2$  of light;

$L_1$  and  $L_2$  are positive integers;

$M_1$  is the maximum value among 0 and positive integers satisfying the conditional expression of  $h_1 > M_1 \lambda_2 / (n_2 - 1)$ ;

$M_2$  is the maximum value among 0 and positive integers satisfying the conditional expression of  $h_2 > M_2 \lambda_1 / (n_1 - 1)$ ; and

$K_1$  and  $K_2$  are values of at least 0.65 but not exceeding 1.35.

5. An optical pickup apparatus comprising the diffraction type lens according to claim 1, wherein said luminous flux incident on said diffraction type lens is substantially a parallel luminous flux.

6. An optical pickup apparatus according to claim 5, wherein said luminous flux is converged at a position where two kinds of optical recording media having thickness values different from each other are disposed, said wavelength  $\lambda_1$  of light being used for recording or reproducing one optical recording medium, said wavelength  $\lambda_2$  of light being used for recording or reproducing the other optical recording medium.